

Application No.: 10/718,466

Docket No.: JCLA11486

In The Claims:

Claim 1. (currently amended) A polishing element for a non-slurry polishing process, comprising:

a polishing platen;

~~a polishing sub-pad set up over the polishing platen; and~~

a fixed abrasive polishing pad set up over the polishing sub-pad; and

a polishing sub-pad set up over the polishing platen and below the polishing pad,

wherein a first surface of the polishing sub-pad interfaces with the fixed abrasive polishing pad and a second surface of the polishing sub-pad interfaces with polishing platen, and either the first surface or the second surface of the polishing sub-pad is an undulating surface, and an upper surface of the fixed abrasive polishing pad undulates with the undulating surface when the fixed abrasive polishing pad is subjected to a pressure.

Claim 2. (original) The polishing element of claim 1, wherein the undulating surface of the polishing sub-pad comprises a plurality of alternately positioned grooves and protruding sections.

Claim 3. (original) The polishing element of claim 2, wherein the grooves form a pattern comprising a series of straights, a series of crosses, concentric circles, spiral or any combination of them.

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Claim 4. (original) The polishing element of claim 1, wherein both the first surface and the second surface of the polishing sub-pad are undulating surface.

Claim 5. (canceled)

Claim 6. (currently amended) A polishing element for a non-slurry polishing process, comprising:

a polishing platen;

a polishing sub-pad set up over the polishing platen; and

a fixed abrasive polishing pad set up over the polishing sub-pad;

wherein a first surface of the polishing sub-pad interfaces with the fixed abrasive polishing pad and a second surface of the polishing sub-pad interfaces with polishing platen, a third surface of the fixed abrasive polishing pad interfaces with the polishing sub-pad and a fourth surface of the polishing platen interfaces with the polishing sub-pad, and the first surface, the second surface, the third surface or the fourth surface is a undulating surface, and an upper surface of the fixed abrasive polishing pad undulates with the undulating surface when the fixed abrasive polishing pad is subjected to a pressure.

Claim 7. (original) The polishing element of claim 6, wherein both the first surface and the second surface of the polishing sub-pad is an undulating surface.

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Claim 8. (original) The polishing element of claim 6, wherein the undulating surface of the polishing sub-pad comprises a plurality of alternately positioned grooves and protruding sections.

Claim 9. (original) The polishing element of claim 8, wherein the grooves form a pattern comprising a series of straights, a series of crosses, concentric circles, spiral or any combination of them.

Claim 10. (canceled)

Claim 11. (currently amended) A polishing platen for assembling with a polishing sub-pad and a fixed abrasive polishing pad to form a polishing element for a non-slurry polishing process, wherein the polishing platen has a body, and a surface of the polishing platen interfaces with the polishing sub-pad such that the surface is an undulating surface, and an upper surface of the fixed abrasive polishing pad undulates with the undulating surface when the fixed abrasive polishing pad is subjected to a pressure.

Claim 12. (original) The polishing platen of claim 11, wherein the undulating surface of the polishing platen comprises a plurality of alternatively positioned grooves and protruding sections.

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Claim 13. (original) The polishing platen of claim 12, wherein the grooves form a pattern comprising a series of straights, a series of crosses, concentric circles, spiral or any combination of them.

Claim 14. (currently amended) A polishing sub-pad for assembling with a polishing platen and a fixed abrasive polishing pad to form a polishing element used in a non-slurry polishing process, wherein the polishing sub-pad has a body, and a first surface of the polishing sub-pad interfaces with the fixed abrasive polishing pad and a second surface of the polishing sub-pad interfaces with the polishing platen such that at least one of the first surface or the second surface of the polishing sub-pad is an undulating surface, and an upper surface of the fixed abrasive polishing pad undulates with the undulating surface when the fixed abrasive polishing pad is subjected to a pressure.

Claim 15. (original) The polishing sub-pad of claim 14, wherein the undulating surface of the polishing sub-pad comprises a plurality of alternatively positioned grooves and protruding sections.

Claim 16. (original) The polishing sub-pad of claim 15, wherein the grooves form a pattern comprising a series of straights, a series of crosses, concentric circles, spiral or any combination of them.

Claim 17. (original) The polishing sub-pad of claim 14, wherein both the first surface and the second surface of the polishing sub-pad are undulating surfaces.

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Claim 18. (currently amended) A fixed abrasive polishing pad for assembling with a polishing platen and a polishing sub-pad to form a polishing element for a non-slurry polishing process, wherein the fixed abrasive polishing pad has a body, and a surface of the fixed abrasive polishing pad interfaces with the polishing sub-pad such that the surface is an undulating surface, and an upper surface of the fixed abrasive polishing pad undulates with the undulating surface when the fixed abrasive polishing pad is subjected to a pressure.

Claim 19. (currently amended) The polishing pad of claim 18, wherein the surface of the fixed abrasive polishing pad comprises a plurality of alternately positioned grooves and protruding sections.

Claim 20. (original) The polishing pad of claim 19, wherein the grooves form a pattern comprising a series of straights, a series of crosses, concentric circles, spiral or any combination of them.

Claim 21. (canceled)